

## 49 NHDOT WORKERS WALK OFF JOB!!

The Summer 2004 issue of the Department's newsletter, On the Move, listed 49 employees who had recently retired. This represents 1,297 years of experience and an average of 26 years of service. Nearly eighty percent of the retirees had served NHDOT for over 20 years. One had served 40 years! These employees worked at every level of the Department and influenced many aspects of its business. This vast warehouse of knowledge and experience is impossible to replace.

During the course of their NHDOT career, nearly everyone has an idea on how to improve some process, material, or product they encounter. Often, informal experiments are conducted to test a theory or compare the performance of two or more items or practices. Great discoveries even occur by accident. Knowledge is gained, but it is of limited use if the story is not documented and shared with others. Someone in another part of the state or a later generation of NHDOT employee may perform the same experiment, failing to benefit from the earlier efforts. How can we take advantage of the lessons learned by those who came before us, and provide a benefit to those who follow? One solution is careful documentation of informal research.



Informal research may simply be the result of having to resolve a problem in an unconventional manner, or with an unfamiliar product. A fresh approach can come from a new employee who is not entrenched in "the way we have always done it", or from a more experienced employee who has always thought there is a better way to do things. In both instances, documentation and proper control of the experiment will yield increased benefits to the Department.

One of the duties of the Research office is to monitor in-house projects that we call Experimental Features (product related) or Problem Solving. These projects are usually completed in cooperation with one or more bureaus. The Research Office acts as the documentation resource for the experiment, and can add value to the research through the services outlined below:

- Document test locations during installations (using GPS or descriptive methods).
- Monitor the test site at a regular frequency (observations are often made over several years) and be the central repository for collected data. The research originator is often a member of the Op-

"No one *wants* to learn from mistakes, but we cannot learn enough from successes to go beyond the state of the art." *Henry Petroski.*

## Feature Project

## Here Today — Gone Tomorrow

The NHDOT Traffic Bureau is always on the watch for the next best thing to extend the life of their markings. The Bureau's FY 2004 Annual Report states that each year, five "long line" crews stripe nearly 90 million feet of 4-inch line. The three intersection stencil crews apply an additional 823,000 feet of pavement marking products annually consisting of stop bars, crosswalks, and legends. This daunting task is necessary because most conventional pavement markings only last about a year before fading from wear.

It is not enough for pavement marking products to be durable against UV rays, the blistering heat of August and the blizzards of February. They must withstand the wear of ever-increasing traffic loads and the wrath of carbide steel plow blades!! The paint industry markets what they identify as "durable" marking products, which are more costly than conventional paint. The cost must be balanced by an acceptable performance period of 2 to 3 years for long line and 3 to 5 years for intersection markings for them to be cost effective for widespread use.

The Traffic Bureau has taken advantage of marking product trials offered by manufacturers. Test decks of epoxy, tape, alternative retroreflective beads, raised markers, thermoplastics, hybrid waterborne paints, grooved installations and more are located across the state to evaluate their visibility and durability. Assistant Traffic Engineer John Corcoran states that the intense statewide striping schedule makes it difficult to document and evaluate these test installations. So, how is product information gathered to share with the decision makers?

John is working with the Research Office to build a database of information about product trials and performance related to roadway markings. The database identifies products, materials, application locations, installation dates, installers, and comments regarding installation and durability performance. Documentation also includes periodic retroreflectivity measurements made by Scott Leslie of the M&R Ride Quality Unit. The Research Office helps perform visual inspections and manages the data.



erations Division or Construction Bureau, who must move on to the next assigned project, unable to continue the experiment through completion.

- Evaluate and provide recommendations on the experimental approach. Is there adequate baseline data or control to ensure that the research results are valid? Are there other variables in the research that might falsely account for improved performance?
- Evaluate data, draw conclusions and document the findings in a report.
- Implement positive or negative test results by sharing the information with affected Department Bureaus and other DOTs. Negative results are still successful research. Knowing what to avoid can be as important as knowing what to use or do.